

## **Research Collaboration Opportunities at Lawrence Livermore National Laboratory**

Chris Budwine

### **Abstract:**

The Lawrence Livermore National Laboratory (LLNL) is a major research facility within the Department of Energy (DOE) complex. LLNL's main mission is in the area of Defense Programs, including a significant effort in non-proliferation and arms control. When phrased in terms of disciplinary areas, over 50% of our research efforts are in the fields of large-scale computing, high energy-density physics, energy and environmental sciences, engineering, materials research and manufacturing, and biotechnology.

The 1990s presented a new challenge to LLNL. Many factors influenced us in modifying our research approach. The main factor is the realization of many scientific problems in our mission areas can best be solved by collaborative teams of experts. At LLNL we excel in physical sciences, but we need the expertise of many others. For example, to find an acceptable solution to reduce earthquake damage requires contributions from engineering, soil mechanics, hydrology, materials sciences, geosciences, computer modeling, economics, law, and political science. In the pursuit of our mission goals, we are soliciting increased research collaborations with university faculty and students.

The challenges facing us and the nation are unprecedented. Pooling talents from universities, other research organizations, and the national laboratories will be an important approach to finding solutions.

\*This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under contract No. W-7405-Eng-48.